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| 26304 7590 01/13/2009 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585 | | | | |
| EXAMINER | | | | |
| ZEWDU, MELESS NMN | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,709

Applicant(s)

ABEDI, SAIED

Examiner

Meless N. Zawdu

Art Unit

2617

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32, 34 and 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-23 and 26-32 is/are rejected.
- 7) ☒ Claim(s) 7, 12, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on 10/20/08.
2. Claim 33 was previously cancelled.
3. Claims 1-32 and 34-35 are pending in this action.
4. This action is final.

Claim Objections

Claims 1-32 and 33-35 are objected to because of the following informalities: the preliminary amendment should have canceled the original claims and the new claims should have continued from the last number in the canceled claims, In other words the new claims presented in the preliminary amendment should have begun from 34. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-11, 21, 22, 26-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (APA) in views of Kitazawa et al. (Kitazawa) (US 2003/0169746 A1) and Cheng et al. (Cheng) (US 7,336,632 B2).

As per claim 1: while the preamble is considered as an intended use, since it does not enhance the body of the claim, the APA discloses at least a method of transmitting data packets in an uplink from a source user equipment to a base station, the data packets being for onward transmission to a destination equipment (see paragraphs 0002-0003), the method comprising:

a service from the base station to a destination user equipment (see paragraphs 0002-0003);

scheduling uplink transmission from the source user equipment to the base station (see paragraphs 0002-0003). As indicated in paragraph 10 of the PGPUB of the specification, examiner considers paragraphs 0002-0009 therein as a prior art upon which applicant's improvement is made. But, the APA does not explicitly teach about determining a measure of a quality of service, as claimed by applicant. However, in the same field of endeavor, Kitazawa teaches about a unit that detects and measures service quality of a plurality of wireless terminals (see fig. 5; paragraphs 0056, 0058). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of the APA with that of Kitazawa for the advantage allocating radio resources for downlink packet transmissions that is in compliance with the service quality of a wireless terminal (see paragraph 0002). But, the APA in view of Kitazawa does not explicitly teach about scheduling uplink transmission

independence on the measure of the downlink quality of service, as claimed by applicant. However, in the same field of endeavor, Cheng teaches that a reverse-link communication can be effectuated at a desired quality of service including supporting inter-user and intra-user QoS (see col. 7, line 57-col. 8, line 8; col. 8, lines 43-64; col. 11, lines 23-30). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references (i.e., APA in view of Kitazawa) with that of Cheng for the advantage of selecting QoS-related information associated with a reverse-link communication service (see col. 3, lines 34-36).

As per claim 2: Kitazawa teaches about a method wherein the measure of the downlink quality of service is determined at the base station (see paragraphs 0056, 0058).

As per claim 3: Kitazawa teaches about a method, wherein the base station transmits an indication of the downlink quality of service to a user equipment (see col. 5, lines 4-21; claim 23).

As per claim 4: Kitazawa teaches about a method, wherein the base station transmits to a user equipment an indication of a transmission format to be used by the user equipment (see paragraph 0009).

As per claim 5: Kitazawa teaches a method, wherein the base station determines a measure of a quality of service for each of the plurality of destination user equipments (see abstract; paragraphs 0056, 0058).

As per claim 8: Kitazawa teaches a method, wherein a plurality of different measures of a quality of service are determined for each of the plurality of destination user equipments (see paragraphs 0058, 0060).

As per claim 9: Kitazawa teaches about a method, wherein at least one of the following measures of a quality of packet delivery from the base station to a destination user equipment is determined:

- (a) throughput ratio
- (b) ratio of satisfied packets

(c) base station buffer occupancy (see paragraphs 0017-0022). The prior art satisfies the at least one of the requirement of claim 9.

As per claim 10: Cheng teaches about a method, wherein, for each destination user equipment, the base station compares each of a plurality of measures of the downlink quality of service for the each destination user equipment with corresponding measures of the downlink quality of service for other destination user equipments, to give a plurality of relative measures (see col. 7, line 57-col. 8, line 8; col. 8, lines 43-64). Note, particularly, the inter-user QoS support.

As per claim 11: Cheng teaches about a method, wherein the base station obtains at least one of the following relative measures:

- (a) distance from average throughput ratio
- (b) distance from minimum throughput ratio
- (c) distance from minimum quality of service
- (d) distance from minimum buffer length (see col. 8, lines 43-64). The prior art

satisfies the at least one of the requirements of claim 11.

As per claim 21: Kitazawa teaches about a method, wherein a source user equipment receiving an indication of a good quality of service transmits data packets to the base station at a lower rate than would otherwise be the case (see paragraphs 0056, 0058-0059, 0065).

As per claim 22: Kitazawa teaches a method, wherein a source user equipment receiving an indication of a poor quality of service transmits data packets to the base station at a higher rate than would otherwise be the case (see paragraph 0058).

As per claim 26: the APA teaches about a method, wherein the base station operates a schedule mechanism for downlink transmission (see paragraphs 0002-0003).

As per claim 27: Kitazawa teaches about a method, wherein the base station transmits the data packets directly to the plurality of destination equipments (see abstract; fig. 2; claim 6).

As per claim 28: Cheng teaches about a method, wherein the base station transmits the data packets to the plurality of destination user equipment via a network (see col. 6, lines 49-67). Motivation is same as provided in the rejection of claim 1 above.

As per claim 31: most of the features of claim 31 are similar to the features of claim 1, except --- a transmission format to be used user by a user equipment and a transmitting unit which transmits to the user equipment an indication of a transmission format to be used by the user equipment, which is taught by the APA (see paragraph 0008). Therefore, claim 31 is rejected on the same ground and motivation as claim 1.

Claims 6, 13-15, 23, 29, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims above, and further in view of Lyon (US 7,373,420 B1).

As per claim 6: the above references do not explicitly teach about a method, wherein the base station determines a credit value for each destination user equipment, the credit value being based on the quality of service, and the base station transmits/distributes each credit value to the corresponding source user, as claimed by applicant. However, in the same field of endeavor, Lyon teaches about a method and apparatus for weighted fair queuing, wherein a credit management determines and allocates credits (credit values) to entities identified in the active credit queue (see col. 6, lines 47-56; col. 5, lines 35-52). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Lyon for the advantage of allowing each flow passing through a network to have a fair share of network resources (see col. 1, lines 12-15).

As per claim 13: the references applied to claim 1 above references teach about a measure of quality of service and determining a time and/or rate of packet transmission. The difference feature in claim 13, which is a source equipment (an entity) receiving a credit value is taught by Lyon (see col. 4, lines 24-62; col. 6, lines 36-56. Motivation is same as provided in the rejection of claim 6.

As per claim 14: the APA teaches a method, wherein the source user equipment determines the time and/or rate of packet transmission based on a measure of radio channel conditions (see paragraphs 0005, 0008).

As per claim 15: the APA teaches about a method, wherein the source equipment determines the time and/or rate of packet transmission based on additionally on a type of service (see paragraphs 0002, 0008). The type of data is determinable from the Transport Format Combination Set (TFCS).

As per claim 23: Lyon teaches about a method, wherein a source user equipment (an entity) receives credit values (see col. 4, lines 24-62; col. 6, lines 47-56). When the references are combined the reception (thus stored) of the credit values will be based on the quality of services, as discussed in the rejection of claim 1 above.

As per claim 29: Lyon teaches about a method, wherein a new credit value is periodically determined and sent to the source user equipment (an entity) (see col. 4, lines 24-62; col. 7, line 57-col. 8, line 24; col. 8, line 62-col. 9, line 12).

As per claim 30: parts of the features of claim 30 are similar to the features of claim 1 and are rejected on the same ground and motivation as claim 1. But, the references applied to claim 1 do not explicitly teach -- producing unit which produces a credit value to a source user equipment (an entity) and a transmitting unit which transmits the credit value to a source user equipment (an entity), as claimed by applicant. However, in the same field of endeavor, Lyon teaches about a method and apparatus for weighted fair queuing, wherein a credit management determines and allocates credits (credit values) to entities identified in the active credit queue (see col. 6, lines 47-56; col. 5, lines 35-52). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of

Lyon for the advantage of allowing each flow passing through a network to have a fair share of network resources (see col. 1, lines 12-15).

As per claim 32: the features of claim 32 are similar to the features of claims 1 and 30. When the references are combined the scheduling uplink transmission will be in dependence on the credit value. Therefore, claim 32 is rejected on the same ground and motivation as claims 1 and 30.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Gholmich et al. (Gholmich) (US 2004/0147276 A1).

As per claims 16: the references applied to claim 1 above do not explicitly teach about a method wherein uplink transmissions are scheduled using rate scheduling, as claimed by applicant. However, in the same field of endeavor, Gholmich teaches that a reverse-link scheduling using rate (see paragraph 0004). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Gholmich for the advantage of achieving a desired reverse link "fairness" objective, to achieve a "maximum throughput" objective (see paragraph 0004).

As per claim 17: Gholmich teaches about a method, wherein uplink transmissions are scheduled using hybrid rate-time scheduling (see paragraph 0004). a particular rate at a particular time same as hybrid rate.
base station grants a mobile station

As per claim 18: the feature of claim 18 is same as the features of claim 17. Because the features of claim 18 are repetitive, only of the features is considered and thus no a requirement for switching. Thus, claim 18 is rejected on the same ground and motivation as claim 17.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references applied to claim 1 above and further in view of Lee et al. (Lee) (US 2002/0155853 A1).

As per claim 19: the references applied to claim 1 above do not explicitly tech about a method, wherein a rate of uplink transmission is varied by adjusting a modulation and coding scheme level, as claimed by applicant. However, in the same field of endeavor, Lee teaches a reverse-link in a mobile communications system, the modulation mode and/or the channel coding can be adaptively adjusted according to changes in the wireless channel conditions (see paragraph 0019). therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify the above references with the teaching of Lee for the advantage effective use of wireless channels and allowing high-speed data transfer on the reverse link (see paragraph 0019).

As per claim 20: Lee teaches about a method, wherein the rate of uplink transmission is varied by adjusting the intervals at which the uplink transmission takes place (see paragraph 0019).

Allowable Subject Matter

Claims 34 and 35 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or fairly suggest scheduling an uplink transmission based on the destination's quality of service and a credit value, wherein the quality of service and the credit are produced by a base station and transmitted to a user equipment for scheduling the uplink transmission, as recited in claims 34 and 35.

Claims 7, 12, 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 10/20/08 have been fully considered but they are not persuasive. Arguments raised by applicant and corresponding response by the examiner are provided below.

Argument I: with regard to claims 1-5, 8-11, 21-22, 26-28 and 31, applicant asserts --- Chang et al., as recited and relied upon by the examiner --- and correspondingly, the proposed combination of references (applicant admitted prior art (AAPA), Kitazawa et al. and Chang et al.) --- only describe respective QoS amongst users and amongst applications for a particular user on a particular link, and would have

failed (separately or in combination) to disclose or suggest the claimed features of scheduling uplink transmissions from source user equipments to the base station in dependence on the measure of the downlink quality of service to a destination user equipment (emphasis and brackets added).

Response I: examiner respectfully disagrees with the argument. In that, as stated in the body of the rejection of the claims being argued about, first it is to be noted that the preamble is an intended use for the reason provided in the rejection. Second, the admitted prior art (AAPA) discloses a wireless communication system comprising a base station and UEs (see paragraphs 0002-0003) wherein uplink scheduling (time scheduling and rate scheduling) (see paragraphs 0005-0008) is utilized. The AAPA also states that the base station is able to make appropriate scheduling since it is solely responsible for transmitting to the destination UEs (see paragraph 0003). One missing element/feature in the claims being argued (particularly claim 1) is --- determining a measure of quality of service. But, this feature is well taught by Kitazawa which teaches about a technique that is directed --- to a technique of allocation of radio resources to a downlink packet, in compliance with the service quality of the wireless terminal (see paragraph 0002; 0056, 0058; figs. 5 and 6). Furthermore, another missing feature in the claims being argued is --- scheduling uplink transmission independence on the measure of a quality of service, which is taught by Cheng et al. (see col. 7, line 57-col. 8, line 8; col. 8, lines 43-64; col. 11, lines 23-30). Therefore, examiner has not found the arguments being persuasive.

Argument II: with regard to claims 6, 13-20, 23, 29-30 and 32, applicant argues using the same reasoning as provided regarding the above claims by virtue of these claims being dependant on claim 1.

Response II: examiner respectfully refers applicant to the preceding (above) response since the argument regarding these claims is relied upon the same reasoning as presented regarding claim 1, and no specific argument is presented regarding the claims in question.

As a final note: the current amendment to claims 1-3, 9-10, 12-13, 15, 19-20, 23 is just a rephrasing of features that were already there (in the claims); the amendment does not change the scope of any of the claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2617

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/

Primary Examiner, Art Unit 2617

1/13/2009